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December 5, 2018

The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
The Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

In re: Application of Duke Energy Carolinas, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-321 E

Application of Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, Docket No. 2018-322 E

Dear Ms. Boyd:

I am Director, On-Road Vehicles for Environmental Defense Fund (EDF). I am writing this letter in support of the application by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC in the above-referenced dockets for approval of a pilot program related to electric transportation. The applications propose four different programs, related to: (1) residential electric vehicle (EV) charging; (2) EV school bus charging; (3) EV transit bus charging; and (4) direct current fast charging. EDF will focus on the EV school bus and transit bus programs.

As background, EDF is a national non-profit membership organization that links science, economics, and law to create innovative, equitable, and cost-effective solutions to society's most urgent environmental problems. EDF has more than two million members nationwide and over 29,000 in South Carolina. The economic, safety and environmental interests of EDF and its members are directly impacted by Duke Energy's proposed EV programs.

EDF is particularly interested in Duke Energy's proposed programs for EV school bus charging and EV transit bus charging because, in order to impact harmful emissions from the transportation sector, it is critically important to target medium- and heavy-duty vehicles. Many states have started to develop programs to support residential EVs but few states have developed programs to support medium- and heavy-duty EVs.

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Heavy duty vehicles – which range from box vans to buses to tractor-trailers – perform critical tasks for our economy. Through them, our kids our transported to school, grocery stores are kept stocked, power lines are maintained, and packages are delivered to our homes. These vehicles are a major source of environmental harm. They account for a quarter of all transportation GHG emissions globally and are on pace to nearly double these emissions by 2050.1 Emissions from diesel trucks degrade air quality at the local level and lead to tens of thousands of premature deaths annually.2

Over the course of the next decade, we have an opportunity to alter the emissions trajectory of heavy-duty vehicles. Electric power is an increasingly viable alternative for trucks and buses. Manufacturers have announced the development or production of more than 50 electric truck or bus models for the North American market alone. By establishing these trucks as a major component of our fleet, we can make meaningful progress reducing GHG emissions and local air pollutants.

In the U.S., medium-and-heavy duty trucks and buses account for 445 million metric tons of GHG annually and two million tons of nitrogen oxidesi (NOx) – a powerful pollutant that contributes to asthma and other respiratory problems. Diesel trucks are a leading source of NOx pollution in many areas, including South Carolina – where diesel trucks account for 33% of total NOX pollution.3

Electrification of school and municipal bus fleets is also important from the standpoint of our children's health. Children breathe 50% more air per pound of body weight than adults and their lungs are still developing, making them especially vulnerable to cancer and respiratory diseases caused by diesel pollution. A child sitting in the back of a school bus with windows closed is exposed to four times more diesel pollution than a child riding in a car or a child sitting in front of the same bus. Asthma is a leading chronic illness among South Carolina children. Diesel pollution can be mitigated by electrifying our school and municipal transit bus fleets.

EDF has the following specific recommendations concerning Duke Energy's EV proposal:

- The Commission should convene a working group with the electric utility companies and all interested stakeholders to study how to remove barriers to a robust deployment of EV charging services for light-, medium- and heavy-duty vehicles.

- The working group should include state transportation and economic development officials and planning officials in major cities, who can provide input on high volume transportation corridors, tourism, economic development and disadvantaged communities' needs.

- The working group should ensure that charging services are available in the appropriate areas and at the appropriate speeds..

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1 International Energy Agency, Energy Technology Perspectives 2017, June 2017.

2 H. Christopher Frey (2018) Trends in onroad transportation energy and emissions, Journal of the Air & Waste Management Association, 68:6, 514-563, DOI: 10.1080/10962247.2018.1454357

3 South Carolina Department of Insurance, Beneficiary Mitigation Plan For the State of South Carolina Under the Volkswagen Environmental Mitigation Trust, Figure 3. November 28, 2018.

- Utilities should conduct load research studies on the impact of EV charging loads – including from medium-and-heavy duty vehicles -- on the grid and should incorporate EV charging loads in their integrated resource planning and distribution system design planning.

- Utilities should develop a pilot program for EV owners to sell electricity and ancillary services back to the grid (EV2G).

EDF supports Duke Energy's proposal because it will help remove financing barriers for these vehicles. Utilities should develop pilot programs providing financial incentives for purchasing vehicles/equipment and charging stations to a limited number of public school districts, mass transit systems, public port and airport equipment so that the utilities can study the load impacts and develop appropriate time-of-use rates and EV2G programs.

In addition to the direct payment to subsidize the school bus purchase, EDF recommends that Duke Energy modify its pilot program proposal to also include an option for school districts to purchase EV buses by financing the purchase through monthly installment payments based on TCO savings. On-bill financing would greatly reduce the amount of direct financial subsidy required to incentivize the purchase of EV buses. Duke Energy would incur financing costs; however, these finance costs would be offset by the additional revenue from increased sales of electricity.

Respectfully submitted,

/s/ Jason Mathers

Jason Mathers
Director, On-Road Vehicles